UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: June 21, 1996

SUBJECT: ON-SCENE COORDINATOR'S REPORT - Removal Action at the Carl's Retreading Tire Fire, Traverse City, Grand Traverse County, Michigan, Site ID# 14

FROM: Rick Karl, Chief
Emergency Response Branch

TO: Debbie Dietrich, Acting Director
Emergency Response Division

THRU: William Muno, Division Director
Division of Superfund

Attached please find the On-Scene Coordinator's (OSC) Report for the removal action conducted at the Carl's Retreading Tire Fire site located in Traverse City, Grand Traverse County, Michigan. The report follows the format outlined in the National Contingency Plan (NCP), Section 300.165. This response was initiated on December 30, 1995, as enforcement and oversight of the potentially responsible party (PRP), collection of air monitoring data, and support of local officials in extinguishing the tire fire. On January 15, 1996, the United States Environmental Protection Agency (U.S. EPA) took over the incident using Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) funds because the PRP claimed that they had exhausted their funds. The fire was extinguished on January 20, 1996. The OSC for this removal action was Rose Ellison.

The site posed an immediate threat to public health, welfare and the environment. The action was taken to mitigate threats to the public health and the environment posed by the ongoing release of benzene and unknown by-products of tire combustion.

Costs under the control of the OSC are estimated at $266,750.00, of which $100,000.00 was for the Emergency Response Cleanup Services (ERCS) contractor.

Any indication in this OSC Report of specific costs incurred at the site is only an approximation, subject to audit and final definitization by U.S. EPA. The OSC Report is not a final reconciliation of the costs associated with a particular site.

Portions of the OSC Report appendices may contain confidential business or enforcement-sensitive information and must be reviewed by the Office of Regional Counsel prior to release to the public.

EXECUTIVE SUMMARY OF THE REMOVAL ACTIVITY

SITE: Carl's Retreading Tire Fire Site

LOCATION: Traverse City, Michigan

PROJECT DATES: 12/30/95 - 1/20/96

INCIDENT DESCRIPTION: The Carl's Retreading Tire Fire site, which was not listed on the National Priorities List (NPL), was an emergency response action involving a tire fire at a tire recycling facility located south of Traverse City, Michigan. The property covers 4.5 acres of which approximately 1 acre was tire piles involved in the fire. A building and several semitrailers, located on the property, were also involved in the fire.

The removal action was taken to mitigate the threats to human health and the environment posed by the ongoing release of by-products of tire combustion. Literary information, regarding past tire fires, documented that smoke and vapors from previous tire fires contained metals, sulfur compounds, particulates (including carbon black, zinc oxide, titanium dioxide, and silicone dioxide), and aromatic hydrocarbons (including polynuclear aromatic hydrocarbons (PNAs), benzene, toluene, ethylbenzene, and xylene (BTEX)). The fire, which encompassed approximately 35,000 cubic yards of burning tires, was releasing a large plume of smoke which affected the surrounding community.

ACTIONS: The United States Environmental Protection Agency (U.S. EPA), the Technical Assistance Team (TAT) and the Superfund Technical Assessment and Response Team (START) contractor, and the United States Coast Guard (USCG) Atlantic Strike Team (AST) mobilized to the site and conducted extensive air monitoring from December 30, 1995, to January 20, 1996. In addition, on January 15, 1996, U.S. EPA On-Scene Coordinator (OSC) activated the Emergency Response Cleanup Services (ERCS) contractor to continue the firefighting started by the potentially responsible party (PRP) and their contractor when the PRP informed U.S. EPA that they must cease financing the operations due to lack of funds. Response actions by ERCS included burying the burning tires and burning shredded tires in excavated pits to extinguish the flames, and providing lab analyses of air samples and ash to determine what substances may have been released off site. The last burning material was buried and extinguished on January 20, 1996.

Approximately 35,000 cubic yards of burning tires and burning shredded tires were buried on site in trenches that were

approximately 15 feet in depth. Soil excavated from the trenches was used to cap the material.

Rose Ellison, OSC
U.S. EPA Region V
Grosse Ile, Michigan

I. SUMMARY OF EVENTS

A. SITE CONDITIONS AND BACKGROUND

1. Initial Situation

The Carl's Retreading Tire Fire (CRTF) site, which was not listed on the National Priorities List (NPL), was an emergency response at an active tire recycling facility. Carl's Retreading actively receives used tires which are shredded for use as a fuel source, retreaded for reuse, or sold to different facilities for reuse in tires or other products. Carl's Retreading has been operating at the site since 1991 and has been in business for approximately 11 years. Prior to 1991, the property was vacant land owned by a private party. Carl's Retreading began accumulating tires at the site in 1993 and purchased a tire shredder in January 1994. The CRTF site is an approximately 4.5-acre property that consisted of a building with a loading dock, several semitrailers, and between 200,000 to 500,000 shredded and whole tires staged in piles on a 1-acre parcel.

The CRTF site was located at 5175 Sawyer Woods Drive, in Traverse City, Blair Township, Grand Traverse County (GTC), Michigan (44°39'7" North, 85°40'0" West), in a rural residential area with some light industry. The site is bordered by Sawyer Woods Drive to the north, light industry and residences to the east, forested land to the south, and residences located on Compton Court to the west. Residences are located approximately 200 feet to the west of the fire in the Brentwood Subdivision, as well as within 400 feet to the south and east of the site. Blair Township has a population of about 5,247 persons. Residences surrounding the site obtain drinking water from local groundwater. Surface water bodies, including Cox Pond and Beitner Creek, are located approximately 1,000 feet north of the site (Figure 1).

On December 29, 1995, at approximately 0930 hours, a fire, believed to have ignited on or around the facility's tire shredder, began. The fire was reported to the Grand Traverse County Rural Fire Department (GTCRFD) around 0930 hours. Initial attempts to extinguish and control the

fire on December 29, 1995, were unsuccessful. Monitoring of the fire was needed to assess the nature of substances being released to the air in the smoke plume. Additional monitoring of local groundwater and surface water was necessary to respond to concerns that contaminated runoff water from firefighting activities might affect these natural resources. In the early morning of December 30, 1995, officials, including the GTC Emergency Management Director and a representative from the Michigan State Police Fire Marshall Division, notified state and federal emergency response organizations in an attempt to obtain assistance with monitoring and fighting the fire. The United States Environmental Protection Agency (U.S. EPA) Emergency Response Branch (ERB) was contacted at 0325 hours on December 30, 1995, and was requested to provide assistance in monitoring and fighting the fire.

The tire fire posed a threat to human health and the environment due to the release of unknown by-products of tire combustion. A large plume of smoke and vapors was being generated by the fire and was impacting the surrounding community. Blair Township Elementary School, located approximately 600 feet east of the fire, had been evacuated, and area residents periodically evacuated their residences in response to changing direction of the smoke plume. The smoke plume was an uncontrolled release that was being carried by prevailing winds. Reportedly, particulates were observed as far as 30 miles from the fire. Other by-products from the fire posed a threat to human health and the environment. These included pyrolytic oil and runoff water. Water being applied to the fire was being limited in an attempt to lessen impact on the area groundwater, which supplies the local population with drinking water.

2. Location of Hazardous Substance(s)

There were approximately 200,000 shredded and whole tires staged on 1 acre of the 4.5-acre property. The tires were piled in an open area that is bordered by Sawyer Woods Drive on the north; forested lands to the south and west; and the on-site building, loading dock, semitrailers, and parking area to the east. The tires were in piles that ranged from 4 feet to 40 feet in

height. A shredded tire pile that was approximately 40 feet in height was located on the south central portion of the open area. A large pile consisting of intact used tires was approximately 30 feet in height and was located on the western side of the open area. The other piles consisted of whole used tires and ranged from 4 to 15 feet in height (Figure 2). Tires varied in size from automobile tires to heavy mining equipment tires which were approximately 5 feet in diameter.

Historical information from other tire fires indicate that smoke and vapors, pyrolytic oil, and tire residues containing hazardous substances are potentially generated during different phases of tire fires. The smoke and vapors may contain hazardous substances and other materials such as metals, sulfur compounds, particulates (including carbon black, zinc oxide, titanium dioxide, and silicone dioxide), and aromatic hydrocarbons (including polynuclear aromatic hydrocarbons [PNAs], and benzene, toluene, ethylbenzene, and xylene [BTEX]). The compounds generated in the smoke and vapors vary depending upon the tire types, burning rate, and other factors. Oil is also generated from tire fires when the tire piles generate enough heat and pressure to allow oil to runoff from the fire into surrounding areas or into the ground. This oil is referred to as pyrolytic oil and has been found to contain metals (arsenic, cadmium, chromium, iron, lead, and zinc), BTEX, and PNAs. Tire residues remaining after complete or incomplete combustion may contain metals, BTEX, styrene, and polyaromatic hydrocarbons (PAHs).

Groundwater and surface water near the site were potentially threatened by the aforementioned forms of off-site migration of contaminants. Residences in the Brentwood Subdivision to the west of the site are supplied with drinking water from a central community well. Residences located on Sawyer Road, approximately 400 feet east of the site, are supplied by private wells. Other nearby residences are supplied with drinking water from private wells. Wells in the area of the site are finished at approximately 80 feet below the surface. Oil and runoff from the firefighting activities could potentially migrate and contaminate Cox Pond and Beitner Creek. Local surface topography slopes from the site to

the north, creating the migration potential to these surface water bodies. The Michigan Department of Environmental Quality (MDEQ) and the Grand Traverse County Health Department (GTCHD) are planning to complete post-fire groundwater sampling to determine what effect, if any, the tire fire had on local drinking water. MDEQ has completed sampling of tire residues. The potentially responsible party (PRP) has completed independent sampling of runoff water from firefighting activities. Both MDEQ's and the PRP's sampling were completed in order to characterize the materials and determine if their constituents pose any threat to nearby surface water. The results from the aforementioned sample analyses are pending.

3. Cause of Release or Discharge

On December, 29, 1995, the GTCRFD, with firefighters from 12 GTC fire departments, attempted to extinguish or contain the fire with water. As the nearest fire hydrant is over 5 miles from the site, the water was transported by tankers to the site from nearby surface water bodies, including Cox Pond and the Boardman River. Attempts to control and contain the fire with water were unsuccessful as winds from the southwest spread the fire to other tire piles on site. Further attempts to extinguish the fire on December 29, 1995, were suspended. The Emergency Management Director from GTC reported the fire to the U.S. EPA ERB due to the concerns regarding continued releases of smoke and potential contaminants to the air.

Residents, who lived to the east and northeast of the site (downwind of fire at the time), were evacuated on December 29, 1995. These evacuations were completed due to the concern over the potential levels of contaminants to which the residents might be exposed. This uncontrolled release of potentially hazardous materials necessitated the mobilization of U.S. EPA and the Technical Assistance Team (TAT)/Superfund Technical Assessment and Response Team (START) for an emergency response.

4. Efforts to Obtain Response by Responsible Parties

On December 30, 1995, the U.S. EPA On-Scene Coordinator (OSC) arrived at the incident command

post for the fire scene. Local enforcement and fire officials informed the OSC that Steve Hubert was one of the owners of the site. The U.S. EPA OSC gave verbal Notice of Liability to Mr. Hubert. At that time, Mr. Hubert verbally agreed to hire and finance a cleanup contractor, Northern A-1, to assist with extinguishing the fire. Mr. Hubert also allowed Northern A-1 to use the Carl's Retreading facility's heavy equipment, including two trackhoes, to fight the fire. He also offered his personal knowledge of the facility and his personnel to help out where needed. Mr. Hubert's personnel replaced the GTC Sheriff's Deputies who were providing overnight security. No other PRPs have been identified, but a title search has been requested to verify current and past property ownership.

B. ORGANIZATION OF THE RESPONSE

The initial decision to fight the fire using mechanical means (to bury the piles of burning tires) was reached by U.S. EPA OSC, GTCRFD Chief (Incident Commander [IC]), and the GTC Emergency Management Director on December 30, 1995. The chain of command for the site assigned the GTCRFD Chief the role of IC, in charge of the everyday firefighting operation and all of the firefighting resources, including Northern A-1. The U.S. EPA OSC was in charge of the air monitoring conducted by TAT/START and USCG AST, ERCS when the site became a fund-lead, and in charge of the overall firefighting effort in coordination with the IC. The GTC Emergency Management Director was responsible to notify residents and businesses of voluntary evacuation when it became necessary, responsible for release of information to the press, and responsible for coordination of resources. Tables 1, 2, and 3 outline the federal, state, local agencies and governments, and other parties that provided response, firefighting, and other volunteer aid and donations during the firefighting, as well as the roles that they served.

For the duration of the emergency, firefighting activities were conducted during daylight hours, which were from approximately 0800 hours to 1700 hours each day. Meetings were held at the end of every day with the IC, OSC, Emergency Management Director, PRPs, USCG AST, TAT/START, Northern A-1, and Blair Township officials being present. Daily progress was reported

Table 1
ORGANIZATION OF RESPONSE
FEDERAL AGENCIES AND CONTRACTORS
CARL'S RETREADING TIRE FIRE SITE
TRAVERSE CITY, MICHIGAN

Agencies or Parties Involved	Contact	Description of Participation
U.S. EPA Region 5 Response Section 1 9311 Groh Road Grosse Ile, MI (313) 692-7689	Rose Ellison, Lead On-Scene Coordinator Jason El-Zein, On-Scene Coordinator	Responsible for procurement, direction, and oversight of federal resources (USCG, TAT/START, etc.), oversight of PRP activities, overall success of cleanup activities, and coordination with IC. Responsible for reporting air results and updating press.
United States Coast Guard (USCG) Atlantic Strike Team (AST) P.O. Box 68 Fort Dix, NJ 08640-0068 (609) 724-0008	Charles Anglin Gregory McMenimen Jude Bendt Scott True	Provided the OSC with project direction, technical and administrative support, air monitoring, photo and site documentation, and sampling.
USCG USCG Air Station Traverse City, MI 49686 (616) 922-8222	Eric N. Fagerholm, Commanding Officer	Provided personnel and aircraft to conduct overflights with IC, OSC, TAT/START, and others for aerial photodocumentation.
U.S. Congressman, First District 1120 E. Front Street, Suite D Traverse City, MI 49686 (616) 929-4711	Bart Stupak, Congressman	Arranged use of two Oshkosh air crash units from Phelps-Collins and provided other resources.
Ecology & Environment, Inc. (E & E) TAT & START Contracts 12251 Universal Road Taylor, MI 48180 (313) 946-0900	Michael Dieckhaus Sandra Basham Raghu Nagam	Provided the OSC with technical assistance, administrative support, air monitoring, sampling, photo and site documentation, site safety, and draft report preparation.

Table 1 (cont.)
ORGANIZATION OF RESPONSE
FEDERAL AGENCIES AND CONTRACTORS
CARL'S RETREADING TIRE FIRE SITE
TRAVERSE CITY, MICHIGAN

Agencies or Parties Involved	Contact	Description of Participation
Environmental Quality Management, Inc. (EQM) 1310 Kemper Meadow Drive Cincinnati, Ohio 45240 (800) 500-0575	Mark Helm Jackie Doan Sharon Laycock	Provided subcontractor, Northern A-1, procurement and tracking efforts for subcontractors and analytical for air samples.
Northern A-1 Services, Inc. 2305 North US-131 Kalkaska, MI 49646 (616) 258-9961	Van Larkin	Provided personnel and equipment necessary to assist with extinguishing tire fire. Coordinated firefighting methods with IC, PRP, and OSC.
Roy F. Weston, Inc. Emergency Response Team (ERT) 1 Weston Way West Chester, Pennsylvania 19380-1499 (610) 701-7353	Geoff McCall, Video Producer/Director	Provided personnel and equipment to videodocument the tire fire and create an informational video regarding tire fires.
Great Lakes Naval Training Center Glenview Naval Air Station Glenview, Illinois	Mark Schultz	Provided Oshkosh air crash unit and personnel to assist in firefighting.

during these meetings, as well as any coordination and safety problems. Changing work areas, new methods for fighting the fire, and air monitoring were also discussed at the meetings. Twice daily press briefings were held by the OSC and IC in the early days of the fire and were reduced to one per day after the first two weeks of the fire.

The command post was established at the Blair Township Elementary School. Federal representatives stationed at the command post included U.S. EPA, USCG AST, TAT/START, and later, the ERCS contractor. The state representatives consisted of the State Police Fire Marshall Division who assisted with organizing volunteer firefighters from all over the State of Michigan. Township and county representatives included Blair Township officials and the GTC Emergency Management director. The school hallway was used as a check-in point for all volunteer firefighters and visitors and as a staging and break area for firefighters. The cafeteria was used as a food service area for breakfast, lunch, and dinner for firefighters.

The intersection of Sawyer Woods Drive and Sawyer Road was used as the entrance and check-in point for all personnel entering/exiting the hot zone. All personnel entering the hot zone were required to have a personal bar code which was created upon their check-in at the school. Bar coding was completed using the new Fire-Trax™ Incident Command Software system developed in northern Michigan to track personnel at fire scenes.

The intersection of Sawyer Woods Drive and Sawyer Road was also used as the setup area for the pump truck and surge pools to supply water to the firefighters in the hot zone cooling the heavy equipment and the surfaces of the burning piles. Water tankers transported water approximately 2.5 miles from a well on the Cherry Growers, Inc., facility and emptied their water into the pools.

In the hot zone, the firefighters established a forward command post in one of the fire chief's vehicles. Oversight of the firefighting was conducted, and firefighters at the staging area in the school were on standby to replace a team exiting for break. Firefighters, who were on supplied breathing air, were changed out approximately every 30 to 40 minutes. Northern A-1 equipment operators took breaks as they felt necessary. Both Northern A-1 and the

II. EFFECTIVENESS OF REMOVAL ACTIVITIES

A. ACTIONS TAKEN BY PRPS

On December 30, 1995, after verbally agreeing to take financial responsibility for fighting the fire, Mr. Hubert hired Northern A-1. Northern A-1 developed a health and safety plan that was adequately followed. Hubert allowed Northern A-1 to utilize his facility's heavy equipment and personnel to assist where needed. On January 12, 1995, Hubert notified the U.S. EPA OSC that he would not be able to fund the firefighting beyond January 14, 1996, due to a lack of funds. No other financially viable PRPs were found that were willing to undertake the necessary activities.

B. ACTIONS BY STATE AND LOCAL AGENCIES

Grand Traverse County: The GTCRFD responded to the fire, and the GTCRFD Chief became the IC of the fire and coordinated all of the firefighting efforts. The GTCRFD and all city fire departments and fire battalions within the county were the primary firefighters during the fire. Inspectors from the GTCFD provided the investigation into the cause of the fire. Representatives from the County's Emergency Management Division, including the Director, provided initial notification of all state, federal, and other responders. GTC Emergency Management coordinated the enforcement and security use of the GTC Sheriffs' Department, release of information to the press, and notification and evacuation of nearby residences and businesses. The GTCHD received and evaluated air monitoring information and determined whether residences and businesses needed to be evacuated.

Blair Township: Many of the township officials, including the township supervisor, clerk, and zoning manager, were present in the command post during the firefighting activities. The township officials coordinated with school officials for the use of Blair Township Elementary School as the command post. They also organized the volunteer resources for food and other assistance. The officials provided information and facilities for the public meetings.

MDEQ: Representatives from MDEQ's Surface Water Quality Division, Waste Management Division, Air Quality Division, and other divisions visited the site during the initial days of the fire, as well as throughout the response activities. The

Table AT-1 (cont.)

CARL'S RETREADING TIRE FIRE
DAILY AIR MONITORING RESULTS
JANUARY 6, 1996

Equipment	Station #1	Station #2	Station #3	Station #4
Realtime aerosol monitor (mg/m^3)	0.39^m NM^a	NM^m NM^a	NM^m NM^a	0.052^m NM^a
Combustible meter Oxygen (percent)	NM^m NM^a	NM^m NM^a	NM^m NM^a	NM^m NM^a
Hydrogen sulfide (ppm)	NM^m NM^a	NM^m NM^a	NM^m NM^a	NM^m NM^a
Carbon monoxide (ppm)	NM^m NM^a	NM^a NM^a	NM^a NM^a	NM^m NM^a
Photoionization detector (ppm)	NM^m NM^a	NM^m NM^a	NM^m NM^a	NM^m NM^a
Hazdust 10μm particulate (mg/m^3)	NM^{ma}	0.18^{ma}	0.22^{ma}	0.13^{ma}
Photovac snapshot Benzene (ppm) Toluene (ppm) C8aro (ppm) (Ethylbenzene, Metaxylene & Orthoxylene)	 $<0.10^{ma}$ $<5.0^{ma}$ $<5.0^{ma}$	 $<0.10^{ma}$ $<5.0^{ma}$ $<5.0^{ma}$	 $<0.10^{ma}$ $<5.0^{ma}$ $<5.0^{ma}$	 $<0.10^{ma}$ $<5.0^{ma}$ $<5.0^{ma}$
Hi-vol samples for PAHs (mg)				
Naphthalene	0.129	0.063	0.086	0.060
2-Methylnaphthalene	0.120	0.064	0.044	0.048
Acenaphthylene	0.0057	0.0051	0.0069	0.0037
Acenaphthene	ND	0.0014	0.0011	ND
Fluorene	0.0051	0.0037	0.0031	0.0018
Phenanthrene	0.011	0.0063	0.0084	0.0048
Anthracene	0.0015	ND	0.0012	ND
Fluoranthene	0.0051	0.0032	0.0037	0.0021
Pyrene	0.0047	0.0029	0.0038	0.0024
Chrysene	0.0016	0.001	ND	ND
Benzo(a)anthracene	0.0012	ND	ND	ND
Benzo(b)fluoranthene	0.0021	0.0013	ND	0.0011
Benzo(g,h,i)perylene	0.0014	ND	ND	ND

Key:

NM = Not monitored.
ND = Not detected.
^{m} = Morning.
^{a} = Afternoon.
ppm = Parts per million.
μm = Microns.
mg/m^3 = Milligrams per cubic meter.
mg = Milligrams

Table AT-1 (cont.)

CARL'S RETREADING TIRE FIRE
DAILY AIR MONITORING RESULTS
JANUARY 6, 1996

Compounds*	Station #1	Station #2	Station #3	Station #4
Halocarbon 12	NM	NM	3.4 $\mu g/m^3$	3.2 $\mu g/m^3$
Chloromethane			1.3 $\mu g/m^3$	1.3 $\mu g/m^3$
Halocarbon 11			1.7 $\mu g/m^3$	1.8 $\mu g/m^3$
1,1,1-trichloroethane			0.4 $\mu g/m^3$	0.4 $\mu g/m^3$
Carbon tetrachloride			0.3 $\mu g/m^3$	0.3 $\mu g/m^3$
Benzene			5.4 $\mu g/m^3$	1.9 $\mu g/m^3$
Toluene			13.4 $\mu g/m^3$	4.4 $\mu g/m^3$
Ethylbenzene			0.6 $\mu g/m^3$	0.2 $\mu g/m^3$
m and p-xylenes			1.7 $\mu g/m^3$	0.7 $\mu g/m^3$
o-xylenes			1.1 $\mu g/m^3$	0.5 $\mu g/m^3$
1-ethyl-4-methylbenzene			0.4 $\mu g/m^3$	0.2 $\mu g/m^3$
1,3,5-trimethylbenzene			0.4 $\mu g/m^3$	ND
1,2,4-trimethylbenzene			1.3 $\mu g/m^3$	0.5 $\mu g/m^3$
1,4-dichlorobenzene			0.5 $\mu g/m^3$	0.4 $\mu g/m^3$
Formaldehyde			4.5 ng/L	
Acetaldehyde			3.1 ng/L	
Acetone			2.8 ng/L	
Propionaldehyde			0.7 ng/L	
N-butylaldehyde			2.4 ng/L	

Key:
NM = Not monitored.
ND = Not detected.
$\mu g/m^3$ = Micrograms per cubic meter.
ng/L = Nanograms per liter.
* = Compounds detected in MDEQ Summa canister samples.